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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,319	04/17/2001	Eun-Kyung Lee	Q63516	5337

7590 12/31/2002
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 12/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/835,319

Applicant(s)

LEE ET AL.

Examiner

Armando Rodriguez

Art Unit

2828

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/17/02
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-16, 18 is/are pending in the application.
- 4a) Of the above claim(s) 3-5, 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6, 8-10, 16 and 18 is/are rejected.
- 7) ☒ Claim(s) 7-10, 17, 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed October 17, 2002 have been fully considered but they are not persuasive. Applicant's arguments are directed to the structural arrangement of the active layer and the refractive index of the semiconductor layers of the reflectors.

Regarding the structural arrangement of the active layer, applicant has amended the claim to dispose the active layer on the lower reflector. Applicant has established the same structure as illustrated in figure 1 of applicant's admitted prior art (AAPA). Furthermore, applicant has failed to establish the criticality of such structural arrangement and implies a design preference.

Regarding the refractive index of the semiconductor layers of the reflectors, applicant's attention is directed to column 3 line 60 and column 4 line 50 of the Paoli reference (PN 5,699,375), where the alternating layers of AlGaAs and AlAs have different aluminum contents. It is known in the laser art to obtain different refractive index of a pair of layers may be accomplished by altering the aluminum content, see Jiang et al (PN 6,021,146) column 3 line 41.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,6,8-10,16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over figure 1 of Applicant's admitted prior art (AAPA) in view of Paoli (PN 5,699,375) and Jiang et al (PN 6,021,146).

Figure 1 (AAPA) discloses a laser having a substrate (10), a lower reflector (12) with alternating layers of different refractive index, an active region (14) on the lower reflector, an upper reflector (16) with alternating layers of different refractive index, see pages 2 and 3 of the specification.

Figure 1 (AAPA) does not disclose a multi-wavelength surface-emitting laser.

In the abstract Paoli describes a multiple wavelength surface-emitting laser with neighboring cavities (130,140) having first and second distributed Bragg reflectors (DBR) (104,122) and an active region (108), where the DBR provide reflection to obtain a dual wavelength laser system and all elements of the laser system having a common substrate (102); each neighboring cavity having a pair of upper electrodes (160,162) and lower electrode (194), as shown in figure1. In column 3 line 60 and column 4 line 50 discloses the alternating layers of AlGaAs and AlAs having different aluminum contents.

As disclosed by Jiang et al (PN 6,021,146) in column 3 line 41 it is known in the laser art to obtain different refractive index of a pair of layers may be accomplished by altering the aluminum content.

Therefore, it would have been obvious at the time the invention was made to combine the multiple wavelength surface emitting laser of Paoli with the structure of figure 1 of applicant's admitted prior art because it would provide a multi-wavelength laser system for use in optical systems.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

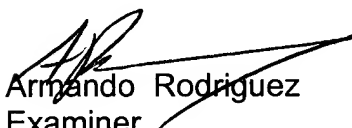
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7721 for After Final communications.

Art Unit: 2828

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.


Armando Rodriguez
Examiner
Art Unit 2828


QUYEN LEUNG
PRIMARY EXAMINER


Paul Ip
Supervisor
Art Unit 2828

AR/PI
December 29, 2002